



R&D is the source of our group’s growth. We will continue with our proactive investments and human capital development to further strengthen and accelerate our R&D capabilities.

With “Protecting and fostering life and nature” as our main theme, our group has grown and prospered by supporting global food production through the manufacture and sale of agricultural chemicals. Driven by R&D, we will work to create further innovation based on the experience and knowledge that we have accumulated over the years. We will develop new agricultural chemicals and fine chemicals that meet market needs and customer requirements by utilizing our integrated R&D system that covers every phase from the exploration of new compounds to process chemistry. In this way, we will contribute to the realization of a sustainable society.

Managing Executive Officer,
Head of Research & Development Division YANO Hiroyuki

Our Strengths in R&D

We are an R&D-oriented enterprise whose mainstay business is agricultural chemicals. Our strength lies in our R&D system that covers the whole process of agricultural chemicals development in a wide range of fields. A major requirement in the development of new agricultural chemicals is that they be highly effective against targeted pests and weeds. There are also various hurdles to be cleared, such as safety to crops, safety to non-targeted organisms, and environmental impact. Launching an agricultural chemical product onto the market requires enormous time and cost, and the probability of candidate compounds actually being made into finished agricultural chemical products is said to be 1 in 160,000. Compared with that, we have developed new agricultural chemical products with an extremely high probability of roughly 1 in 7,500. I believe that there are five factors that enable Kumiai to achieve such a high probability of successful development. They are the establishment of an efficient R&D system that encompasses a wide range of research areas,

global market forecasts closely linked to the field, accumulated development know-how, vigorous investment in R&D, and excellent human capital who are well versed in a wide range of research fields. The reason for our success today is that we have been able to leverage these management resources to a high degree.

To date, we have developed 20 agricultural chemical active ingredients. Development of these active ingredients requires a combination of technological capabilities in various fields, including chemical discovery and synthesis, biological evaluation, safety assessment, environmental impact assessment, formulation development, and process development. We are currently advancing the integration of our accumulated R&D and cutting-edge technologies and working to strengthen and accelerate our R&D capabilities even further on a daily basis.

As R&D must constantly be looking 10 or 20 years ahead, we are creating new value under a forward-looking strategy while making the most of our management resources.

Current Status and Future Measures

The mission of R&D departments is to expand our research and business domains through the development of innovative technologies and products, contribute to the realization of a prosperous society, and grow the company. Through the introduction and development of technologies in collaboration with external parties, as well as delving deeper into our own technologies, we are placing efforts into the creation of new value in our core business, the Agricultural Chemicals and Agriculture-Related Business, and the Fine Chemicals Business, which we aim to develop into the second pillar.

Development of products and technologies centered on agricultural chemicals

The Agricultural Chemicals and Agriculture-Related Business, our core business, is engaged in the development of new technologies and products that contribute to the individual countries’ government policies on global food production and

environmental issues, such as the Strategy for Sustainable Food Systems, MIDORI in Japan, and solutions to various social issues related to those policies. Regarding agricultural chemicals, the mainstay of our business, the miticide, Flupentiofenox, is in the process of registration as an agricultural chemical, while R&D of subsequent pipelines is progressing steadily. In addition, to further accelerate the development of new agricultural chemicals with high probability, we will promote the development of efficient chemical discovery, formulation, and biological evaluation methods, such as target-based screening using IT and AI technologies. We are also proceeding with the development of microbial pesticides, as inputs that have a lower environmental impact, supplement agricultural chemicals, and are able to address a variety of needs. ECOARK® is highly effective against crown gall, which occurs in grapes and other crops and for which no effective control measures yet exist. This product was registered

as a biological pesticide in March 2025, and we are now proceeding with preparations to provide new technologies to production sites.

We are also working on the development of technology that makes use of peripheral technologies cultivated in the development of agricultural chemicals. We are advancing the development of biostimulants as inputs that contribute to the improvement of productivity by helping crops grow, and to the reduction of stress on crops such as rising temperatures and droughts due to climate change. Moreover, as technological development to contribute to environmental solutions, we are actively engaged in R&D of various technologies related to agricultural production. These efforts include the development of technologies that reduce greenhouse gas emissions from cropland and the application of genome editing technology to the R&D of crops resistant to environmental stress and pest-resistant crops.

Our group’s fine chemicals are widely used in infrastructure and daily necessities, supporting our daily lives in many ways. With the organic synthesis technology cultivated in R&D of agricultural chemicals at its core, our Fine Chemicals Business works to create new technologies and products with a focus on semiconductor-related areas, leveraging our group’s technologies and facilities. Going forward, we will continue to develop technologies for fine chemicals and new materials that will contribute to solutions to social issues and enrich people’s lives.

Investment in R&D

As R&D is a source of growth and development takes a long time, we make investments on an ongoing basis.

Our R&D is conducted by the Chemical Research Institute and the Life Science Research Institute in tandem. In recent years, we have been proactively making capital investments in both institutes to further strengthen our R&D capabilities. In October 2023, the Chemical Research Institute (ShIP) began

operation. By integrating Kumiai’s three research centers (chemical discovery, formulation, and process) and bringing chemical researchers with a high level of expertise together under one roof, a place where R&D can be advanced collaboratively was established. In addition, with renovation and updating of the Life Science Research Institute currently underway, we will advance the establishment of the foundations for encouraging co-creation that transcends research areas and generating new innovation.

In addition to capital investment, we are also actively investing in human capital and in the testing and intellectual property needed for development, and we are working to enhance our R&D capabilities on both tangible and intangible fronts.



Human Capital Development

Human capital is the driving force for the advancement of R&D, and we are also actively focusing efforts on human capital development. In addition to recruiting talent with specialized knowledge, we are also implementing measures to enhance our people’s expertise after they have joined the Company, such as overseas training and support for obtaining a doctorate. As our target is the global market, even our younger employees have many opportunities to go on overseas business trips. In this way, we are cultivating outstanding researchers who have obtained a wide range of knowledge and perspectives through various experiences.

For the creation of new value, we believe that, in addition to the use of IT and AI systems, R&D cannot succeed without the creativity (inspiration) of researchers. In the early stages of R&D, we need the power of researchers who can create rough diamonds from nothing, so we encourage our researchers’ growth by creating opportunities for them to take on a wide range of challenges.

Status of Development of New Active Ingredients and Technologies

Name	Field	Practical evaluation stage	Development stage	Region/crop expansion
Insecticides				
Flupentiofenox (VANENTA®)	Miticide		●	
Insecticide A	Insecticide for paddy rice		●	
Insecticide B	Insecticide for paddy rice and horticulture	●		
Fungicides				
Fungicide A	Fungicide for fruit trees and vegetables	●		
Fungicide B	Fungicide for field crops	●		
Herbicides				
EFFEEDA®	Herbicide for wheat			●
Herbicide A	Herbicide for field crops	●		
Microbial pesticides and biostimulants				
ECOARK®	Microbial pesticide for the control of crown gall			●
Microorganism A	Microbial pesticide for fruit trees and vegetables	●		
Microorganism B	Biostimulant	●		